

**Notice of Allowability**

Application No.

10/523,186

Examiner

Phillip A. Johnston

Applicant(s)

KALINITCHENKO, IOURI

Art Unit

2881

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 7-23-2007.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application   |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>9-19-2007</u> |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                        |
|  | 9. <input type="checkbox"/> Other _____   |

***Detailed Action***

1. This action is in response to the amendment filed 7-23-2007, wherein claim 1 has been amended. Claims 1-20 are pending.

***Examiners Amendment***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Edward Berkowitz on 9-18-2007. The changes made below are underlined.

The Claims are amended as follows;

- 1. (currently amended) A mass spectrometer comprises:

a plasma ion source, which provides analyte ions;  
a mass analyzer;  
an interface between the plasma ion source and the mass analyzer; and  
the interface comprising an interface structure being one of a sampling cone and a skimmer cone of the interface, which separates a first region at a relatively high pressure adjacent a first surface of said structure, which receives plasma from the plasma ion source and providing separation from a second region at a relatively low pressure leading to the mass analyzer, said second region adjacent a second surface of said interface structure and, which provides an aperture having axial extension forming a reaction zone between the first surface and the

second surface through which the plasma flows from the higher pressure region towards the lower pressure region through said axial extending aperture,

the interface structure comprising a passage, which supplies a substance into the reaction zone aperture interacting with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions; wherein the passage is located completely within a cone and leads from an inlet to an outlet at said cone aperture. --

-- 15. (original) A method for plasma mass spectrometry in accord with the structure of claim 1 comprising the steps of:

generating a plasma containing analyte ions;  
substantially confining the plasma radially within the reaction zone of claim 1 whilst flowing it from a higher pressure region towards a lower pressure region;  
supplying a substance directly into the substantially radially confined plasma to cause reactive or collisional interactions with polyatomic or multicharged interfering ions therein and thereby attenuate such polyatomic or multicharged ions;  
and extracting an ion beam from the plasma for mass analysis of the analyte ions. --

-- 16. (original) The method for plasma mass spectrometry as claimed in claim [16] 15, wherein the substance is supplied into the substantially radially confined

plasma so as to create a shockwave in the plasma to promote the rate of reactions or collisions for improving the attenuation of interfering ions. --

***Allowable Subject Matter***

3. Claims 1-20 are allowed.

***Examiner's statement of reasons for allowance***

The following is an examiner's statement of reasons for allowance:

4. Claim 1 is allowed because prior art fails to show an interface between a plasma ion source and a mass spectrometer, where the interface includes a sampling cone and a skimmer cone forming an axial reaction zone between the cones, such that a substance, when delivered to the reaction zone through a passage having an inlet and an outlet in a cone, interacts with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions.

5. Claims 2-20 are allowed by virtue of their dependency upon allowed claim 1.

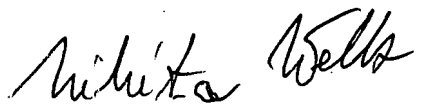
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Conclusion**

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Robert Kim can be reached at (571) 272-2293. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ  
September 20, 2007

  
NIKITA WELLS  
PRIMARY EXAMINER  
09/27/07